

REVISION OF THE NYCTOZOILIDES—GENERA AND SPECIES (Fam. TENEBRIONIDÆ).

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REVISION OF THE AUSTRALIAN NYCTOZOILIDES (TENEBRIONIDÆ).

LACORDAIRE divided the Helæides into two groups—

- (i.) Prothorax and, generally, the elytra
foliated laterally *Helæides vrais*
- (ii.) Prothorax and elytra not foliated
laterally *Nyctozoïlides*.

The second of these contain aberrant forms, sometimes little related *inter se*, and are, according to the above, degraded Helæides. The prothorax is in general moderately widened and channelled within, with a more or less thickened raised border; the head is less enclosed by the anterior angles of the prothorax than in the true Helæides, while the posterior intercoxal process is much wider, diverging behind and rounded in front, and strongly bordered; the epimera are more or less posterior, so that the episterna generally reach the sides of the mesothorax. The prosternal process is wide, strongly produced and more or less rounded at the apex. The antennæ are generally longer than in the true Helæides, while the form of the body is usually more elongate and convex.

The genera and species are widely distributed over the whole continent of Australia, and probably form relics of its most ancient fauna, occurring, often as rare species, in the driest and least-explored districts; so that it is not remarkable that hitherto comparatively few examples are found in the older collections. Isolated forms of great interest, the prehistoric remains of a dying race, are still being brought to light, and it is probable that a large number of species will be discovered as the vast interior of Australia—now in process of desiccation, according to Professor Spencer—is more systematically visited by the naturalist.

The group has been long in a confused condition, so that it has been difficult to determine species already described, and even to determine the genera themselves, except by those entomologists who have access to the types. It is especially for the sake of Australian entomologists that the author ventures to tabulate the genera and species, though aware of his inability to do full justice to the subject, having at least one qualification in the opportunity of inspecting a larger quantity of material than that available to previous writers on the group. A visit to London three years ago thus enabled him to examine the types of *Onosterrhus*, *Hypocilibe*, *Amphianax*, &c., in the British Museum collection. The collections of the Macleay and Australian Museums in Sydney, of the National Museum, Melbourne, and the Queensland Museum, Brisbane, have all been examined, thanks to the courtesy of the respective curators; also I have to thank Mr. Lea for the loan of his collection; while fairly long series of certain species in my own collection, many of which were captured by the author, enable me to speak more decidedly on sexual and other variations. The present classification of the genera of the Australian Tenebrionidæ is so confused that we are grateful to Herr Gebien for some attempt at placing the genera of this group in a more natural order in the new catalogue of Junk. In this catalogue sixteen genera appear, of which two, *Cilibe* and *Pseudopatrum*, are confined to New Zealand, and one, *Pseudhadrus*, to the Seychelles Islands. These three are therefore excluded from the range of this paper. Gebien also places *Trichosaragus*, *Ospidus*, *Edylius*, and *Byallius* in this section. As regards the first of these, the author, Blackburn, placed *Trichosaragus* as an ally of *Saragus*, and thus a member of the true Helæides. Through the courtesy of Mr. Tepper I have received cotypes of *T. pilosellus*, Blackb., and an examination of this insect leads me to endorse Gebien's classification of it under the Nyctozoilides. The mandibles are bifid at the apex (a fact omitted in the generic diagnosis of the author), while the prothorax and elytra are not foliaceous nor dilated laterally, while the intercoxal process is wide and rounded. Pascoe placed *Ospidus* also under Helæinæ, as an ally of *Cilibe*. Its winged body, with the corresponding elongate metasternum, and its narrow triangular intercoxal process, and comparatively wide though declivous lateral border to the elytra, are combinations of characters quite opposed

to this classification. I prefer, therefore, to consider *Ospidus* as an aberrant form of the true *Hebeides*. *Re Edylius*, its author, Champion, referred it to the *Pedinides* of Lacordaire, and my present ignorance of this group prevents any discussion as to the correctness of the proposed change. As regards *Byallius*, Pascoe placed it amongst the *Adeliinæ* as an ally of *Atryphodes* (*Cardiothorax*), but this seems to me a mistake, since the form of the prosternum, the wide intercoxal process, the sculpture of the elytra, and shape of the prothorax at once proclaim it as a nearer ally of *Æthalides*. Thus *Ospidus* and *Edylius* have been excluded from my list, while *Trichosaragus* and *Byallius* have been retained. The group thus contains, according to the present writer, eleven existing genera, to which he ventures to add a new genus, *Onotrichus*. The twelve genera of the Australian Nyctozoilides may be tabulated for identification as follows:—

TABLE OF THE GENERA OF THE NYCTOZOILIDES.

1. (2.) Eyes completely divided	} Saragodinus.
2. Anterior tarsi dentate on outer edge	
3. (23.) Eyes not completely divided.	
4. (19.) All tibiæ with outer edge entire.	
5. (20.) Mandibles bifid at apex.	
6. (8.) Submentum with a strong lateral tooth projecting vertically.	
7. Form very convex, elytra smooth, sub-obsolete) costate, or (rarely) rugose-reticulate	} Onosterrhus. Hypocilibe.
8. Form more elongate and depressed, anterior angles of prothorax acutely produced	
9. (14.) Submentum angulate, scarcely or very shortly dentate.	Agasthenes.
10. (12.) Form elongate-ovate, convex, sub-parallel.	
11. (14.) Prothorax evidently wider than long.	
12. Elytra finely costate, intervals rugose-punctate ..	Æthalides.
13. (14.) Form more ovate and explanate.	
14. Elytra strongly sculptured, costate, or rugose-reticulate, or both	Nyctozoilus.
15. (20.) Submentum not at all dentate.	
16. (18.) Form elongate, narrow and convex.	
17. Prothorax nearly as long as wide, its surface asperate	*Styrus.
18. Prothorax much wider than long, its surface smooth or finely punctate	Byallius.
19. Form sub-depressed, prothorax contracting in front	*Amphianax.
20. Pilose, convex, smaller than above, sides of prothorax, anterior and intermediate tibiæ crenulate on outer edge	Trichosaragus.
21. (23.) Mandibles simple at apex.	
22. Prothorax short, subtruncate at apex, eyes not at all divided	Aglypta.
23. Anterior tibiæ crenulate on outer edge	Onotrichus n.g.

In the above, the second column of numerals (in brackets) refers to the number in the first column that is included by the character specified.

* Bates omits any reference to mandibles in *Styrus* and *Amphianax*. I find them distinctly bifid at apex in *Styrus*, but unfortunately I have no specimen of *Amphianax* for examination.

NOTES ON THE GENERA.

Onosterrhus, Pasc. = *Hypocilibe*, Bates.

I am able to endorse the sagacious forecast of Dr. Haag-Rutenberg (Journ. Mus. Godeffr. 1879, p. 119), who strongly suspected the connection between these genera, and who in describing *Hypocilibe impunctata* noted that one of the distinctive characters of Bates's genus—the structure of the maxillary palpi—had already broken down. Mr. Blackburn makes a similar suggestion (These Proc. 1890, p. 564), though he seems not to have identified any described species of *Onosterrhus*, and no collection in our museums or elsewhere in Australia contained identified specimens of Pascoe's genus. The opportunity of a visit to the British Museum collection in 1907 enabled me to examine Pascoe's and Bates's types, while the examination of a large number of specimens makes it certain that there is no valid ground for retaining the genus name *Hypocilibe* as distinct from *Onosterrhus*. Bates distinguished *Hypocilibe* from *Onosterrhus* by its more expanded and less convex form, the more deeply sulcate gula, and the cultriform apical joint of the maxillary palpi (which in *Onosterrhus* is triangulate); the submentum tooth is larger and the sides of the epistoma more parallel. All these distinctions fail in my examination of the large number of species now available. The species of *Hypocilibe* are mostly very large, of *Onosterrhus* much smaller, so that characters like the tooth of submentum and the gular sulcus are more evident in the former. The distinction in the apical joints of the maxillary palpi would be a good one if constant or definite, but I find it impossible to say exactly where such a joint ceases to be triangulate, and in this matter it depends very much on the position of this joint in relation to the preceding joints. Moreover, in no case can I find this joint to be truly cultriform, even in the typical species *H. Macleayi* (of which I feel sure of correct identification); it is rather securiform, or sub-triangulate in certain positions. In size, the described species of *Onosterrhus* vary from 12 mm. long (*O. levis*, Pasc.) to 18 mm. long (*O. Batesi*, Haag-Rut.), while those of *Hypocilibe* vary from 15½ mm. long (*H. inconspicua*, Blackb.) to 23 mm. long (*H. heroina*, Blackb.). In form they vary from being widely ovate to elongate-ovate and sub-parallel, with varying degrees of convexity. I propose, therefore, to merge the species of these two genera, and in future to

consider *Hypocilibe* as non-existent in describing the following new species. The described species are thus eighteen in number. Of these I have twelve more or less certainly identified in my collection, two more have been identified (with a query) in other collections, while the following five species are so far unknown to me:—*O. laevis*, Pasc., *O. punctulatus*, Bates, *O. inconspicuus*, Blackb., *O. lugubris*, Blackb., *O. veterinosus*, Blackb. (the last three described as *Hypocilibe*). The inclusion of the sub-parallel species with those of oval form, together with my wider study of the group, makes it necessary to refer *Agasthenes Stepheni*, Cart., to *Onosterrhus*, where it occupies a position somewhere between *O. Deanei* n. sp. and *O. latus*, Blackb. I would also place *Nyctozoilus Sloanei*, Blackb., in this genus. The author seems to have had considerable doubt as to its correct place. The only character in which it varies from the normal is its submentum, where the "distinct tooth" becomes an enlarged angulate process. This variation also occurs in *O. socius* n. sp., *infra*, and throughout the genus I find graduated modifications of it varying from this wide angulation to the large knobbed tooth in *O. bos* n. sp. and *O. major*, Blackb. I would also suggest the synonymy of *O. inconspicua*, Blackb. = *O. lugubris*, Blackb., since their descriptions do not warrant their separation; the only differences named by the author being that the former has the "basal joint of the front tarsi channelled beneath and scarcely wider than the second joint," and the "impunctate ventral segments." These characters seem quite inadequate for distinction, depending largely on the condition of the specimens. The two species occur within the same geographical area (within forty miles). It is possible that *O. heroina*, Blackb., may be found conspecific with *O. major*, Blackb. I have been able to identify one specimen of the former from Shark Bay, and two of the latter from Yalgoo, W.A., from description, and note that, besides the differences quoted by Mr. Blackburn (Report of the Horn Expedition 1896, p. 279), my specimens of *O. major* have the epistoma slightly sinuate in front, while the species I assume to be *O. heroina*, Blackb., has that feature distinctly trilobed, while the whole head of *O. major* is much more strongly punctured. A longer series may show these, as well as the differences noted by their

author, to be inconstant. The genus *Onosterrhus* will thus consist of the following:—

- 7 species already described as *Onosterrhus* ;
- 11 species already described as *Hypocilibe* ;
- 1. (*O. Sloanei*, Blackb.) transferred from *Nyctozeilus* ;
- 1 (*O. Stepheni*,* Cart.) transferred from *Agasthenes* ;
- 8 n. sp., *infra*.—Total, 28.

These may be tabulated as follows:—

TABLE OF ONOSTERRHUS.

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|---|---|
| 1. (36.) Colour black or brownish, elytra not obviously costate or reticulate. | |
| 2. (18.) Form widely ovate. | |
| 3. (11.) Size large. | |
| 4. (8.) Front edge of prosternum with tubercle. | |
| 5. Ocular lobe raised into pronounced tooth (as in <i>Pterohelaeus cornutus</i>); dimensions 23-24 × 14-14.5 mm. | <i>bos</i> n. sp. |
| 6. Ocular lobe not dentate. | |
| 7. Epistoma trilobed, head very minutely punctate, lateral gutter of pronotum wider; dim. 22-23 × 13 mm. | <i>heroina</i> , Blackb. |
| 8. Epistoma sinuate, head manifestly punctate, lateral gutter of pronotum narrower; dim. 22 × 12 mm. | <i>major</i> , Blackb. |
| 9. (44.) Front edge of prosternum without tubercle. | |
| 10. Obscure brown-black, quite impunctate above, shoulders not prominent; dim. 20 × 12 mm. | <i>impunctata</i> , H. Rut. |
| 11. Nitid brown-black, head finely punctured, shoulders prominent through the widely reflexed epipleural fold; dim. 20 × 12 $\frac{2}{3}$ mm. | <i>rotundata</i> , Blackb. |
| 12. Size less. | |
| 13. Upper surface opaque black, angles of prothorax slightly acute; dim. 15 $\frac{1}{2}$ -16 × 8 mm. ... } | <i>flugubris</i> , Blackb.
<i>†inconspicua</i> , Blackb. |
| 14. Upper surface nitid black, angles of prothorax very acute; dim. 17 × 10 mm. | <i>Duboulayi</i> n. sp. |
| 15. (18.) Size small, 14 mm. long. | |
| 16. (18.) Anterior angles of prothorax acutely produced. | |
| 17. Elytra smooth and impunctate | <i>acuticollis</i> n. sp. |
| 18. Elytra sub-obsolete costate, strongly punctate | <i>goudici</i> n. sp. |
| 19. (36.) Form elongate-ovate. | |
| 20. (22.) Size large. | |
| 21. Opaque black, sides of prothorax rounded, margins thick, elytra with parallel sides; dim. 21-22 × 10-11.5 mm. | <i>Stepheni</i> , Cart. |
| 22. Pitchy-brown, moderately nitid, sides of prothorax less rounded, elytra with rounded sides; dim. 20 × 10 mm. | <i>lata</i> , Blackb. |
| 23. (36.) Size smaller. | |

* In Junk's Catalogue this name is misspelt as *Stephensi*.

† Species unknown to the author.

24. Head, pronotum, and elytra extremely finely punctured; dim. 16×8.5 mm. ... *vage-punctatus*, H. Rut.
25. Head, pronotum, and elytra distinctly punctured; dim. 13.5×6.8 mm. ... **punctulatus*, Bates.
26. Head finely, elytra distinctly punctured, pronotum smooth; dim. 18×9 mm. ... *Batesi*, H. Rut.
27. (35.) Head finely punctured, pronotum and elytra smooth.
28. (30.) Elytra with parallel sides.
29. Margins of pronotum thick, sides rounded and sinuous behind; dim. 16×8 (vix.) ... *Deanci* n. sp.
30. Margins of pronotum moderate, sides less rounded; dim. 14×6.6 mm. ... *opacus*, Bates.
31. (36.) Elytra with rounded sides.
32. Four hind tibiae not hairy within; dim. $15 \times 8\frac{1}{2}$ mm. ... *marginicollis*, Bates.
33. (35.) Four hind tibiae hairy within.
34. Prothorax in front simply emarginate, angles directed forward; dim. 15×8 mm. ... *levipennis*, H. Rut.
35. Prothorax strongly emarginate, angles directed outwards; dim. 12 mm. long ... **lavis*, Pasc.
36. Head smooth, pronotum finely, elytra strongly punctate; dim. 10×5 mm. ... *parvus* n. sp.
37. (39.) Elytra obviously costate and reticulate.
38. Prothorax widest in front of middle, lateral channel smooth, posterior angles dentate; dim. 20×11 mm. ... *socius* n. sp.
39. Prothorax widest at or behind middle, lateral channel rugose, posterior angles undentate; dim. 18.5×11 mm. ... *Macleayi*, Bates.
40. Elytra with three evident costae on each, and sub-obsolete reticulated; dim. $19-20 \times 11-12$ mm. ... *Sloanei*, Blackb.
41. Elytra feebly costate, not reticulate; dim. 16×10.4 mm. ... *sculpturata*, Blackb.
42. Elytra feebly reticulate, not costate; dim. 16×9 mm. ... **reternosa*, Blackb.
43. Opaque brown, covered with squamose derm; dim. $19.22 \times 10-13$ mm. ... *squamosus* n. sp.
44. Elytra with five testaceous vittae on each; dim. 19×10 mm. ... *vittatus*, Blackb.

NOTES ON THE ABOVE.

O. impunctata, H. Rut.—A single specimen in the Macleay Museum is labelled "Peak Downs," the district of the type.

O. rotundata, Blackb., I have from Forbes, Narromine, Cootamundra (New South Wales, Sea Lake (Victoria), and Condamine River (South Queensland).

O. lata, Blackb.—Doubtfully determined from description, I have from Mildura, Victoria.

O. vage-punctatus, H. Rut., was described as from Queensland. I have three specimens which answer to the description from Birchip, North-west Victoria.

O. Batesi, H. Rut.—Specimens in the Macleay Museum correspond very well to the description.

O. opacus, Bates.—Determined from a specimen in the National Museum, Melbourne, from West Australia.

O. marginicollis, Bates.—Two specimens from Kellerberrin, West Australia.

O. laevipennis, H. Rut.—A number of specimens which fit the description closely were sent by Mr. C. French from the North Territory, Port Darwin. The author only gives Australia as the locality, though Masters' Catalogue states Queensland as the habitat.

O. Macleayi, Bates, I have identified from Bell and Dalveen (South Queensland).

O. Sloanei, Blackb.—Several specimens given me by Mr. Sloane, from Moorilla, near Young, New South Wales.

O. vittatus, Blackb.—Two specimens given me by Mr. Illidge, one labelled "N. Queensland." There are also specimens in the Queensland Museum.

TABLE OF ÆTHALIDES.

[The genus *Agasthenes* has already been tabulated by me (Proc Linn. Soc. New South Wales 1910, p. 132.)]

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| 1. | (3.) Pronotum with explanate horizontal margin, thinly bordered. | |
| 2. | Elytra with sub-obsolete costæ, intervals closely, irregularly rugose-punctate and faintly reticulate | <i>punctipennis</i> , Bates. |
| 3. | Elytra with six well-marked costæ, intervals coarsely and irregularly punctured, the punctures defined and not very close | <i>costipennis</i> , Cart. |
| 4. | (6.) Pronotum with lateral margin channelled, not horizontal, its border strongly thickened. | |
| 5. | Elytra with eight indistinct costæ, intervals with irregular shallow foveæ | <i>marginicollis</i> , Cart. |
| 6. | Elytra with ten distinct costæ | <i>decemcostata</i> , Cart. |

TABLE OF NYCTOZOILUS.

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| 1. | (5.) Pronotum coarsely rugose, elytra intervals indefinitely reticulate. | |
| 2. | Lateral border of pronotum crenulate; dim. 19-20 x 11 mm. | <i>Deyrollei</i> , Bates. |

3. (5.) Lateral border of pronotum entire.
4. Colour coal-black, lateral border of pronotum strongly reflexed, hind angles produced; dim. 16×9 mm. *carbonarius* n. sp.
5. Colour brown, lateral border of pronotum scarcely reflexed, hind angles not produced; dim. $14 \times 7\frac{1}{4}$ mm. *ruficornis* n. sp.
6. (8.) Pronotum finely rugose, elytral intervals definitely reticulate.
7. Lateral border of pronotum thick, rounded and raised; dim. $17-18 \times 9-10$ mm. *Mastersi*, Macl.
8. Lateral border of pronotum thin, scarcely raised; dim. $18-20 \times 10\frac{1}{2}-11$ mm. *obesus*, Guér.
9. (23.) Pronotum punctate.
10. Elytra reticulate, not costate; dim. $15\frac{1}{3} \times 8\frac{2}{5}$ mm. *irregularis*, Blackb.
11. Elytra 8-costate; dim. $11-12 \times 6-6\frac{1}{2}$ mm. *Dœneli*, H. Rut.
12. (23.) Elytra 6-costate.
13. (18.) Intervals definitely reticulate.
14. Size large, $15-17 \times 9-10\frac{1}{2}$ mm. *reticulatus*, Bates.
15. (18.) Size smaller.
16. Lateral margins of pronotum reflexed, club of antennæ 6-jointed; dim. $12 \times 7\frac{1}{5}-8$ mm. *crassicornis*, Blackb.
17. Lateral margins of pronotum horizontal, club of antennæ 4-jointed; dim. $12\frac{2}{3} \times 8\frac{2}{5}$ mm. *approximatus*, Blackb.
18. Pronotum much more distinctly punctate than 17, club of antennæ 5-jointed; dim. $12 \times 7\frac{2}{5}$ mm. *inæqualis*, Blackb.
19. (23.) Intervals obsoletely or indefinitely reticulate.
20. Sides of pronotum slightly crenulate, deeply sinuate behind; dim. $14 \times 7\frac{1}{3}$ mm. *sexcostatus*, Champ.
21. (23.) Sides of pronotum entire.
22. Sides of pronotum sinuate anteriorly and posteriorly; dim. $13-15 \times 7\frac{1}{2}-9$ mm. *Hardcastlei* n. sp.
23. Sides of pronotum very slightly sinuate posteriorly only, margins scarcely differentiated from disc; dim. 14×8 mm. *vermiculatus* n. sp.

NOTES ON THE ABOVE.

N. Deyrollei, Bates.—The author gives the dimensions as “ $9\frac{1}{2}$ lin.; width of prothorax across the middle 4 lin.,” with the wide locality “Australia,” with the possible suggestion of “Western Australia?” I have specimens from Fernhills and other districts of Eastern Victoria, one of which was compared with Bates’s type, the dimensions being 20×11 mm.

N. Mastersi, Macl.—Specimens from Kingaroy (H. Brown) and Daringa (C. French), South Queensland, have been compared with type. The author omitted to state the width, which is 9-10 mm.

* Species unknown to the author.

N. obesus, Guér.—In Trans. Ent. Soc. London, 1873, p. 348, Bates gives a comparison of *N. obesus*, Guér., with *N. Deyrollei*, stating the length of the type on the authority of M. E. Deyrolle as 9 lin.; but the author gives 20×11 mm. Two specimens sent me by Mr. Illidge, from South Queensland, exactly fit the description, and correspond to the figure given in Lacordaire (except in the exaggerated fovea on the pronotum in that plate), and measure $18 \times 10\frac{1}{2}$ mm.

N. reticulatus, Bates.—My specimens, compared with type, come from various parts of South-west New South Wales (Dubbo, Guntawang, &c.). I have taken a long series myself at Moorilla, near Young.

N. irregularis, Blackb.—A specimen, labelled as from Coolgardie, has been sent for determination from the National Museum, Melbourne (part of the French collection), and exactly corresponds to the author's diagnosis.

N. Dameli, Haag-Rut.—I have a specimen, labelled "Rockhampton," which exactly fits the description. It has not the slightest affinity with the species which Mr. Blackburn describes as *N. Sloanei*, though suggested by that author (Proceedings Linn. Soc. N.S.W., 1894, p. 104). Amongst other differences *N. Sloanei* is more than twice the size of *N. Dameli*.

N. crassicornis, Blackb., and *N. approximatus*, Blackb.—Specimens, bearing labels with their names, in Mr. Blackburn's handwriting, from the Horn Expedition, have been examined by me. Besides the differences noted by the author between these species, *N. approximatus* has the margins of prothorax more explanate and horizontal and corrugated, its border less thick and raised, the posterior angles much less acute and less (scarcely at all) produced than in *N. crassicornis*.

STYRUS.

Dr. Haag-Rutenberg states that *S. (Nyctozoilus) elongatulus*, Macl., is not identical with *S. elongatulus*, Bates, but without giving any reason beyond the inference that the types of the insects referred to have been compared; at least, that is the meaning I attach to his words "wie die Typen auswiesen." I have cotypes

of Macleay's insect, and the very detailed description of Bates accurately corresponds to these. Bates himself says, "I have but little doubt that the species is the same as that described by Macleay." But I do not think that Macleay's type has ever left its original quarters in the Australian Museum, Sydney. Hence without further evidence I must conclude that Dr. Haag-Rutenberg was mistaken, and that there was no need for the name *S. Batesi* which he proposed for Bates's insect, and which appears in Junk's new catalogue; and that the following synonymy holds:—

$$Styrus \left\{ \begin{array}{l} \textit{Batesi}, \text{ Haag.} \\ \textit{elongatulus}, \text{ Bates} \end{array} \right\} = \textit{S. elongatulus}, \text{ Macleay} \\ \hspace{15em} (\textit{Nyctozoilus}).$$

Having collected a long series of *Styrus* in Southern Queensland and Northern New South Wales, I must express some doubt as to the absolute certainty of the above synonymy, since it would be possible to make two or three species from these specimens. The variations in size and sculpture are considerable, but while any lingering doubt remains as to the synonymy referred to I think it unwise to add to the mystery by the description of closely allied forms.

TABLE OF STYRUS.

- A. Sides of prothorax nearly straight.
 Propleuræ coarsely punctate; dim. 17 × 7 mm. *elongatulus*, Macl.
 Propleuræ less coarsely punctate; dim.
 12 × 5 mm. *clathratus*, Blackb.
- B. Sides of prothorax much widened; dim. 16 × 8.3 mm. *laticornis*, Cart.

S. clathratus, Blackb.—I have a specimen, exactly corresponding to the description, given me some years ago by my friend Mr. T. G. Sloane, without any locality label. It is probable that this is a cotype, since Mr. Blackburn also obtained his specimen from Mr. Sloane. It is readily distinguished by its small size, more cylindrical form, paler colour, and finer sculpture from *S. elongatulus*, Macl.

S. laticornis, Cart.—Specimens of this were taken by Mr. Sloane and myself at Guyra, New South Wales, in December, 1910. Amongst other differences the elytral costæ and reticulations are much more sharply raised than in *S. elongatulus*, Macl.

BYALLIUS.

A table of the species of this genus has already been published (Proc. Linn. Soc. N.S.W. 1909, p. 141).

The following are the species proposed as new:—

ONOSTERRHUS PARVUS n. sp.

Elongate-ovate, convex, black sub-opaque above, nitid black beneath, legs piceous, antennæ and tarsi red. *Head* glabrous and impunctate, labrum emarginate, epistoma rounded in front with scarcely perceptible break of curve at the canthus, edges slightly raised, limiting suture only indicated by depression, eyes small and widely separated, antennæ short thin, third joint shorter than the two succeeding, apical four nearly round, of a lighter colour, thirteenth conical. *Prothorax* rather flat, 2.5×4 mm. (length measured in middle, width at base), very minutely punctate, slightly wider at base than at apex, the latter arcuate-emarginate, not margined, anterior angles feebly produced and bluntly rectangular, extreme border (viewed sideways) wide, (viewed from above) narrowly reflexed and channelled within, sides irregularly rounded with a feeble anterior and stronger posterior sinus, the thickened border feebly produced posteriorly downwards and outwards in a short tooth, posterior angle within this border sub-rectangular, without any indication of a central line or basal foveæ. *Scutellum* very transverse and narrow. *Elytra* elongate-ovate, very convex, slightly wider than prothorax at base, greatest width behind middle, sides with a scarcely perceptible margin, only evident from above near the shoulders, apical declivity steep, disc strongly and irregularly punctate with here and there some indications of lineate arrangement (*e.g.*, on each side of the suture a line of rather elongate punctures), with two more or less kevigate intervals, besides the suture, equally distant on each elytron, punctures on apex smaller but evident, lateral row of larger punctures traceable from base to apex. *Mentum* trapezoidal, submentum with lateral tooth widened into a lobate process, transversely strigose and punctate, sternum and femora finely punctate, abdomen and epipleuræ strongly striate and finely punctate, two apical segments of abdomen punctate only, all coxæ finely punctate, tibiæ more coarsely punctate than femora, otherwise smooth, ♂ with slight tomentose line near base of tibiæ.

Dimensions: 10×5 mm.

Habitat: Kookynie, West Australia.

Five specimens are under examination, collected by Mr. Edgar Duboulay, of Kookynie, of which I can only determine one as a male. There is little variation in size. The species differs from the other elongate-ovate species in its small size and distinctly punctate elytra, the nearest allied species — *O. laevis*, Pasc. — having impunctate elytra.

ONOSTERRHUS ACUTICOLLIS n. sp.

Ovate, subnitid, glabrous, black (sometimes with a brownish tinge, antennæ piceous red, tarsi clothed with light-brown tomentum. *Head*—Labrum prominent, showing membranous hinge, epistoma truncate in front, not at all reflexed, sides oblique, meeting canthus at a wide angle, raised and rounded in front of eyes, limiting suture straight and not strongly impressed, minutely punctured; punctures more evident on epistoma than on forehead, antennæ not extending to base of prothorax, third joint as long as fourth and fifth combined, 3-7 sub-cylindric, eighth transverse and cup-shaped, ninth and tenth nearly round, eleventh largest and oval. *Prothorax* 3 × 6 (vix) mm. (length measured in middle, width near base), wider at base than at apex, width across anterior angles 3.7 mm., apex strongly emarginate, anterior angles produced in front of eyes and sharply acute, sides gradually diverging to beyond the middle, then sub-angulately converging and sinuate before the slightly produced acute posterior angles, base and apex with a thin but regular raised border, sides with a strongly raised thickened marginal fold, forming an ample gutter within, disc very slightly convex and almost microscopically punctured. *Scutellum* very widely transverse and short. *Elytra* wider than prothorax and three times as long, humeri obsolete, sides widening in an oval to beyond the middle, rather abruptly contracted near apex, the apex itself lobate, border narrowly raised and shining, very slightly channelled within; disc very convex, depressed at suture behind scutellum, quite impunctate and smooth except for lateral row of punctures continuous almost to apex, apical declivity subvertical; epipleuræ smooth, abdomen finely striolate, posterior intercoxal process widely rounded; prosternum transversely striolate, its process produced into a blunt tooth, tooth of submentum conical and short, anterior tarsi with first joint longer and wider than the rest, tibiæ slender, posterior tibiæ without tomentose line.

Dimensions: 14 × 8 mm.

Habitat: Sea Lake, Victoria.

I am indebted to Mr. J. C. Goudie for several specimens of this species, which I was able to compare with Pascoe's types of *Onosterrhus* in the British Museum, from all of which it differs in the pronounced anterior angles of the prothorax. In general form it is nearest to *O. levipennis*, Haag-Rut. The type is certainly male; what I take to be a female has the anterior tarsi becoming gradually smaller from base to apex, and the anterior angle of prothorax even more strongly produced and a little outwardly directed. The species in this respect resembles *Agasthenes*, but is otherwise very different.

A single specimen, mutilated as to antennæ and hind tibiæ, differs so markedly from the above, though of the same size, colour, and facies, has been sent with the above, and can best be described by comparison with *O. acuticollis* as follows:—

ONOSTERRHUS GOUDIEI n. sp.

Head wider in front of eyes than the preceding, epistoma truncate in front with the sides rounded in a curve continuous with that of canthus, separated from the forehead by a sinuate suture, the whole microscopically punctured. *Prothorax* 4 × 5.5 mm., more widely emarginate at apex, anterior angles even more acute than in the preceding species, and produced forwards and outwards; sides more evenly but less widely rounded, distinctly sinuate near both angles, more strongly in front than at base, posterior angles acute and a little outwardly directed, margins more strongly thickened, lateral gutter wider and more uniform, disc quite smooth in middle, with minute punctures only perceptible at sides. *Elytra* more nitid, sutural region strongly depressed and concave, apical declivity steeper, each elytron with four almost smooth costæ, the space between these with irregularly scattered indefinite rows of evident (to the naked eye) punctures, these becoming larger towards the sides, with the usual single row of large punctures at the extreme sides. Intercostal process truncate with nearly parallel sides, prosternum smooth, its process wider than in *O. acuticollis*, lateral tooth of submentum short and triangular, mandibles wider.

Dimensions: 14 × 8 mm.

Habitat: Sea Lake, Victoria.

The strong punctures on the elytra, the depressed suture through the greater part of its length, the bisinuate sides of prothorax, with the strongly produced anterior angles, differentiate this species from *O. acuticollis*. The punctures are more or less arranged in rows between the sub-obsolete costæ, but are not in definite lines, and are much larger than in any hitherto described species of the genus.

ONOSTERRHUS SQUAMOSUS n. sp.

Widely elongate-ovate, convex upper surface opaque-brown, clothed with short, squamose, rust-coloured hair, underside nitid black, palpi reddish, tarsi and inside of tibiæ clothed with red tomentum. *Head*—Labrum very prominent, epistoma sub-truncate (a little incurved at middle), rounded at sides, making a wide angle with canthus, the latter widely rounded and very little raised, epistoma separated by a deep transverse impression, front rather flat, whole surface (where not obscured by derm) closely punctate, the punctures larger on epistoma and labrum. Antennæ not extending to base of prothorax, third joint as long as fourth and fifth combined, 4-7 increasingly wider, obconic, 8-10 shorter and narrower than seventh, eleventh sharply acuminate, little longer and narrower than the tenth. *Prothorax* 6 × 10.5 mm., widely emarginate at apex, wider at base than at apex, widest at middle, anterior angles rounded and obtuse, sides widely rounded, a little sinuate near base, posterior angles shortly produced backwards and acute, base truncate, margins regular, wide and explanate with extreme edge very narrowly raised, whole prothorax without perceptibly differentiated border and (where not obscured by derm) strongly but not closely punctate; disc very convex, without foveæ or canaliculation. *Scutellum* widely triangular. *Elytra* 14 × 12 mm., shoulders rounded but emphasized by epipleural fold, convex longitudinally and transversely, highest and widest behind middle, gradually widening from shoulders to near apex, with very narrow horizontal border (evident from above throughout, suture flat, a row of large lateral punctures, clothed, but not punctate, like head and prothorax (an abraded specimen

shows an irregular, uneven, rugose surface, with feeble, sub-obsolete costæ). *Abdomen* finely punctate and strigose, prosternum punctate with a short red hair produced from each puncture, its process sulcate in the middle, raised at sides, deflexed and bluntly rounded at apex. Coxæ and legs punctate, epipleuræ smooth, tooth of submentum small, fore tibiæ slightly curved, other tibiæ straight, posterior basal tarsi as long as the rest combined.

Dimensions: 19-22 × 10-13 mm.

Habitat: Coonamble and Walgett, New South Wales.

Six specimens are under examination—from the Agricultural Department (collected by Mr. Froggatt), the Macleay Museum (through the courtesy of Mr. Masters), and the author's collection. Two are certainly male, larger than the presumed females, and have the basal joints of their fore tarsi enlarged, otherwise, except by my examination of the sexual organs, there are no pronounced sexual characters. It is differentiated from all other species by its combination of large size, squamose clothing, the scarcely evident tooth of submentum, and the absence of a defined border to the pronotum, the wide margins of which are punctured like the rest of the unclothed surface. More elongate than *O. impunctatus*, Haag-Rut., or *O. rotundatus*, Blackb., with the apical declivity steeper. There is considerable variation in size, convexity, and even in the anterior angles of prothorax, which (seen from behind) appear acute, but in general form an angle of about 100 deg. In the small tooth of submentum and other respects this species shows a divergence towards *Æthalides*.

ONOSTERRHUS bos n. sp.

MAS.: Widely ovate, convex, whole surface coal-black, nitid, palpi and apical joints of antennæ piceous, apex of tibiæ and tarsi beneath clothed with reddish tomentum. *Head*—Epistoma evenly rounded in front, deeply and widely impressed at sides, forming a wide angle with canthus, the latter straight at the sides, produced and slightly raised in front, forming an evident tooth; forehead separated from epistoma by sinuate ridge, the whole upper surface of head closely and not very finely punctate (punctures stronger on epistoma), eyes small, transverse; antennæ not reaching base of prothorax, third joint as long as the

fourth and fifth together, cylindric, 4-8 successively shorter and wider, subconic, 9-11 much shorter than preceding, narrower than 7, rounded. *Prothorax* 6.5 × 11 mm. (length measured in middle), widest behind the middle, wider at base than at apex (10.5 and 7 mm. respectively), apex widely emarginate, acute anterior angles produced obliquely outwards, sides behind front angles *slightly*, before hind angles *strongly* sinuate, between these sinuations widely rounded with a strongly thickened, rounded, raised, and nitid border, posterior angles very acute, dentate, directed outwards and a little downwards; basal border narrower but evident throughout, apical border wider than basal but much narrower than lateral, obliterated in the middle; disc finely, distinctly canaliculate, very minutely and closely punctured, moderately convex and somewhat explanate laterally, with a wide gutter within the border continuous throughout. *Scutellum* very transverse, raised and emphasized by deep triangular depression behind it. *Elytra* 16 × 14 mm., widely oval, very convex, wider than prothorax at base, shoulder obsolete, widest at middle; steeply declivous and widely rounded at apex, very narrowly margined and channelled throughout, suture transversely deeply depressed behind scutellum, less deeply longitudinally for a short distance behind this, then with stitch-like impressions forming short transverse costæ till near apex; whole disc microscopically punctured and showing under a strong lens faintly vermiculate reticulations in places, with the faintest indications of sub-obsolete costæ, without a sign of the usual lateral row of punctures. *Epiptera* longitudinally impressed, abdomen with basal segments strongly striolate, apical segments closely and evidently punctate; prosternum minutely punctate, in front convex with border raised and sub-tuberculate at middle with some small transverse wrinkles behind this, the prosternal process wide, parallel, its sides raised and channelled within, its apex bluntly rounded and slightly raised. The coxæ, especially the four anterior, strongly punctured, tibiæ straight, shortly bispinose, and tomentose at apex and for a short distance on inner margin. Under surface of head opaque, coarsely and closely punctate, the gula with two large foveæ near middle, and finely transversely wrinkled near sides, teeth of submentum form large blunt prominent tumuli with apex simple.

Anterior tarsi with basal joint much wider than and as long as the next two combined, posterior tarsi with basal joints as long as the rest combined.

FEM.: Larger and more nitid than ♂, thorax wider, transverse sutural markings less evident, the faint elytral markings even more obscure, the posterior tibiæ tomentose at the apex only, basal joint of anterior tarsi less enlarged, posterior tarsi with claw joint longer.

Dimensions of ♂, 23 × 14 mm.; ♀, 24 × 14.5 mm.

Habitat: South Australia (Overland Route of Railway to Kalgoorlie); West Australia—Sandstone, Lawler's District.

Two specimens have been examined—the male taken by Mr. H. Deane, M.Inst.C.E., on his survey of the railway route, the female kindly sent by Mr. C. J. Clayton. The slight differences noted in the two specimens are, I think, only individual or sexual variations, while the shape of the head, somewhat as in *Pterohelaeus cornutus*, Macl., alone clearly distinguishes it from what I take to be *O. heroina*, Blackb. (a specimen of which I have from Shark Bay), which is its nearest ally. The following are the chief points of difference in my specimen of *O. heroina*, Blackb.:—

O. heroina, Blackb.: Epistoma trilobed, not angulate, canthus rounded, submentum with tooth bifid, or at least not entire at apex, tubercle on front of prosternum much larger, lateral channel of pronotum narrower, its anterior angles less acutely produced, elytra with indefinite longitudinal scratch-like markings, the border and lateral channel slightly wider than in *O. bos*. Both species present in general a smooth nitid black surface.

(Since writing the above I have received two more specimens, which I consider conspecific with *O. bos*. The first, A, from Kalgoorlie, is much smaller, 21 × 11 mm.; the other, B, from Shark Bay (whence my specimen of *O. heroina* came), is 24 × 14 mm. A also differs in its lighter and more nitid colour (distinctly brown), and in its more rounded sides of prothorax, and may prove to be a distinct species. At present it may be noted as a variety.)

ONOSTERRHUS DUBOULAYI n. sp.

Oval, very convex, upper surface nitid black (with brownish tinge), beneath glossy black, oral organs, apical joints of antennæ,

and tarsi red. *Head*—Labrum prominent, epistoma squarely truncate in front, joining the canthus at a wide angle, a little concave and depressed below the level of the forehead but without any separating suture, forehead with deep transverse fovea, whole head minutely punctate; antennæ third joint as long as fourth and fifth together, joints 4-7 obconic, 8-10 transverse and subtriangular, eleventh longer than tenth, ovate-acuminate. *Prothorax* 4×8 mm. (length in the middle), greatest width behind the middle, wider at base than apex, anterior angles acutely produced in front of eyes, the angle only narrowly margined at apex, sides widely rounded, strongly sinuate before the acute posterior angles, the latter dentate and slightly twisted outwards; lateral border strongly thickened, rounded and raised, rather widely channelled within throughout, basal border very narrow, disc apparently quite smooth. *Scutellum* widely transverse and raised. *Elytra* 11×10 mm., of same width as prothorax at base, widely oval, very convex, greatest width behind middle, apical declivity steep, each elytron separately rounded at apex, shoulders obsolete, border very narrow, channel within scarcely perceptible, disc very smooth, without a trace of definite sculpture, sutural region depressed behind scutellum, and showing faint transverse impressions. Abdomen faintly striolate on basal segments, and faintly and minutely punctate on the apical; all coxæ punctate and margined by carina, prosternum impressed with a single transverse line, its process produced into a blunt tooth, without any pustule on its front margin, submentum coarsely punctate, its lateral teeth small and blunt, mentum cordate, maxillary palpi with apical joint triangular.

Dimensions: 17×10 mm.

Habitat: Kookynie, West Australia.

A single specimen, male (?), sent by Mr. Edgar Duboulay, after whom I have much pleasure in naming it. There is a very faint line of hairs on the inside of the hind femora. This species could only be confused with *O. major*, Blackb., and *O. lata*, Bl., from both of which it differs by its strongly thickened border of prothorax, while it is much smaller than *major*, Bl. It is much larger than, with quite a differently shaped prothorax to, *O. lugubris*, Bl.

ONOSTERRHUS DEANEI n. sp.

Elongate-ovate, elytra sub-parallel, opaque brown-black above, underside nitid, tarsi and apical joints of antennæ red. *Head*—Epistoma rounded in front, slightly sinuate at sides, a little hollowed and reflexed in front of eyes, canthus briefly rounded and raised, limiting suture transverse and straight, forehead rather flat, whole head minutely but clearly punctate, punctures most evident on epistoma. *Antennæ*—Third joint shorter than the fourth and fifth combined, joints 4-7 obconic, 9-10 nearly round, eleventh ovoid and larger than tenth. *Prothorax* 4.5 × 6.5 mm. (length measured in middle), little wider at base than at apex, widest behind the middle, sinuate at base, anterior angles deflexed, acute, with extreme ends rounded, sides diverging and parabolically curved to beyond the middle, then sinuately contracting near the acute posterior angles; all angles pointing obliquely outwards; extreme margins strongly thickened and nitid at sides, moderate on front of anterior angles, very narrow at base, obsolete at apex; disc quite smooth and impunctate, convex near base, widely explanate laterally, hollowed near anterior angles, impressed at base near posterior angles. *Scutellum* transverse and raised, without any sutural depression on elytra behind scutellum. *Elytra* 11 × 7.8 mm.: of same width at base as prothorax, very convex, humeri obsolete, gradually widening at first, then sub-parallel for the greater part of length, apical declivity moderate, extreme margins very narrowly horizontal and evident from above throughout; disc apparently quite smooth (under a strong lens seen to be minutely streaked), with the faintest suggestion of smooth costæ, and the usual row of large lateral punctures. Abdomen with basal segments faintly striolate, intercoxal process truncate and wide, prosternum convex, transversely striate, its process channelled, and rounded at apex. Tibiæ with very short spurs, posterior without line of tomentum, apex of the same and underside of tarsi clothed with yellow tomentum, submentum with a short knobbed lateral tooth, gula strongly and closely punctate and deeply impressed, the impression forming a triangular plate at the junction with prothorax, its apex pointing forward.

Dimensions: 16 × 7.8 mm.

Habitat: West Australia, on line of surveyed railway between Kalgoorlie and South Australia.

A single male specimen collected by Mr. H. Deane, M.Inst. C.E. It is nearest in form to *O. Batesi*, H.-Rut., and *O. opacus*, Bates; but the former (from Queensland) has punctured elytra, and is evidently larger, while *opacus* is evidently smaller, and has a squarer (less rounded) prothorax amongst other differences.

Type in the author's collection.

ONOSTERRHUS SOCIUS n. sp.

Ovate, opaque black above, moderately nitid beneath, antennæ and tarsi piceous, the former with apical joint reddish, tibiæ and tarsi with red tomentum. *Head*—Labrum prominent showing membrane, epistoma truncate in front, side angles rounded, forming distinct though wide angle with the widely rounded and raised canthus; separating suture curved, well marked at the sides, forehead somewhat depressed (*i.e.*, little raised above the plane of epistoma), whole surface closely and not very finely punctured; antennæ not extending to base of prothorax, third joint as long as fourth and fifth combined, apical four rounded and more transverse than preceding, eleventh longer than tenth. *Prothorax* 5.5 × 8 mm. (length measured in middle), greatest width in front of middle, wider at base than at apex, the latter emarginate with anterior angles acute but slightly rounded at tips, posterior angles acute and strongly produced into a defined tooth, sides slightly sinuate posteriorly, very little rounded and widened from base to near apex, then more strongly converging anteriorly, extreme margins thickened and rope-like, this border abruptly terminating on front of anterior angle, base and discal portion of apex without definite border, lateral channels wide and sub-foliaceous, base truncate, disc without any medial line, minutely and closely punctured, the punctures finer than those on head. *Scutellum* widely transversely triangular. *Elytra* (13 × 11 mm.) very convex and oval, wider than prothorax at base, shoulders obtusely rounded, greatest width near middle, margins very narrow and sub-obsolete anteriorly, slightly wider and horizontal near apex, extreme border very narrow and nitid, a lateral row of large closely-set punctures evident for greater part of length, each elytron with three distinct but not very prominent costæ, besides the raised suture, with irregular transverse reticulation, the interstices dotted rather closely with large punctures, irregular in size and position, becoming less defined and

obsolete at apex. Abdomen faintly striate, intercoxal process wide and round, prosternum convex, its process wide, produced, rounded, and slightly reflexed at apex. Tooth of submentum produced only horizontally forward; hind tibiæ with thin line of tomentum.

Dimensions: 20 × 11 mm.

Habitat: Nunga, Queensland (A. Bishop).

A single specimen, sex doubtful, labelled as above, is amongst some Tenebrionidæ sent by Dr. Hamlyn-Harris for identification. A close ally of *O. Macleayi*, Bates, it can be distinguished by the following characters:—Prothorax less rounded, wider in front of middle (in *O. Macleayi* it is widest at or behind the middle), lateral channel smooth (in *O. Macleayi* distinctly rugose), posterior angles strongly produced into an acute tooth (in *Macleayi* very slightly produced and not dentate); the elytral border is much narrower, while the surface sculpture is much more pronounced as to costæ, reticulation, and punctures.

Type in the Queensland Museum.

NYCTOZOILUS CARBONARIUS n. sp.

Oblong-oval, opaque coal-black, very broad, convex and glabrous, antennæ with apex piceous. *Head*—Surface uneven, closely rugose-punctate, labrum prominent, showing membranous hinge, epistoma truncate with sides rather square, forming an angle with canthus, the latter raised and subangulate, depressed in front of eyes and not produced to cover any portion of eyes, epistoma separated from forehead by strong curved depression produced to the sides, with an elongate pustule in the middle, forehead widely channelled in the middle; antennæ long and stout, extending beyond prothorax, joint 3 two and a-half times as long as 4, 6 and 7 successively wider than 5, 8-10 wide and round, 11 one and a-half times as long as 10, cupola-shaped. *Prothorax* 4 × 6.5 mm. (length measured in the middle), greatest width behind middle, base wider than apex, both truncate-emarginate, anterior angles acute, produced forward and a little upturned, posterior angles strongly produced and slightly twisted outwards and downwards, sides a little undulate and widening to beyond halfway, then strongly sinuately narrowed before the sub-dentate hind angles, extreme border thickened and reflexed, margins fairly wide and

channelled within border, extreme border very narrow at sides, and not continued beyond the angles at apex; disc and margins (like the head) closely, not finely, punctate, with some coarse vermiculate impressions on the centre and short medial line near apex. *Scutellum* triangular, longitudinally deeper and less transverse than usual. *Elytra* much wider than prothorax at base, and closely applied thereto, shoulders obsolete, sides widely oval, with greatest width behind middle, apical declivity steep, each elytron with three sharp slightly undulate costæ, besides the double sutural elevation, the last more strongly raised and bifurcate in the scutellary region, becoming interrupted and nodulose on hinder half; the first costa extending from base to apical declivity, the second from base to beyond the first, the third starting from behind the shoulder at a junction with the second, reticulately and vaguely connected with second near apex; a lateral indefinite line of pustules on posterior half forming a fourth sub-costate impression; intervals with vermiculate transverse indefinite reticulation, with rows of large punctures on sides of costæ, and a row of larger punctures at sides, extreme border not raised or at all horizontal. Under surface black, moderately nitid, glabrous, and minutely shagreened, sternum closely punctate, prosternal process with raised margins, bluntly rounded at apex, intercoxal process wide, margined, the margin interrupted in middle; legs, especially hind femora, very long, tibiæ without tomentose clothing.

Dimensions: 16 × 9 mm.

Habitat: Yetholm, New South Wales (Mr. H. Deane, M.Inst. C.E.).

A single specimen, taken by Mr. Deane, is very distinct from all described species, differing from the other costate species in its subangulate-sided head, its wide elytra (compared with prothorax), the thickened and reflexed margins of prothorax with its pronounced hind angles, and the coarse elytral sculpturation, in which the reticulation is only well defined towards the apex.

Type in author's collection.

NYCTOZOILUS HARDCASTLEI n.sp.

Oblong-oval, convex, dull-black, without any apparent clothing of hair. *Head* closely and not very finely punctured, labrum

prominent, epistoma rounded in front, forming a distinct obtuse angle with the canthus, the latter raised and ear-like, extending halfway across the eyes, forehead depressed, divided from epistoma by deep straight depression not continued to the sides, antennæ long, longer in ♂ than in ♀, extending beyond the prothorax when at rest in both sexes, joint 3 about two and a-half times the length of 4, 6 longer than 5, 8-10 strongly transverse and nearly spherical, 11 oval, one and a-half times as long as 10 and wider than it. *Prothorax* 3.5 × 5 mm., wider at base than at apex, widest at middle, apex truncate-emarginate, anterior angles advanced and acute with vertices rounded, sides sinuate anteriorly and posteriorly, strongly rounded in the middle, posterior angles obliquely produced and acute, explanate margin wide and horizontal, undifferentiated from disc in sculpture, extreme border narrowly raised throughout and simple; disc convex with two large symmetrical depressions, and, together with the margins, closely and evenly punctured (very much as in *Saragus lavicollis*, Oliv.) without medial line. *Scutellum* transverse and triangular. *Elytra* much wider than and two and a-half times as long as the prothorax, widest behind the middle, shoulders round and wide, sides well rounded, each with three well-raised, shining, slightly crenulate costæ, the first extending from base to the apical declivity, the second from the base extending nearer the apex (sometimes almost continuous with the third costa near apex) with a strong outward curve on anterior part, the third starting near the outward bend of the second costa (sometimes vaguely extending to the shoulder), and nearly reaching the apex; the suture itself forming a double costa less raised than preceding, the intervals between the costæ transversely rugose and corrugated (not reticulate), the surface everywhere roughly shagreened, a lateral line of impressions rather than punctures more evident anteriorly than posteriorly at extreme margin; beneath blackish-brown, quite smooth, three basal segments of abdomen minutely longitudinally strigose-punctate, apical segments and femora strongly but finely punctate only, pro-, meso-, and meta-sterna and coxæ thickly and not very finely punctured, prosternal process rounded at apex, with raised margins; submentum with a broad subdentate process extending horizontally forward at

the sides. Tibiæ and tarsi rather thinly clad with red bristles; hind tarsi with basal joints nearly as long as the rest combined.

Dimensions: 13-15 × 7.5-9 mm.

Habitat: Cunnamulla, South Queensland (Mr. H. Harcastle).

Twelve specimens have been kindly sent by Mr. A. M. Lea, taken by Mr. Harcastle, after whom I name this species. Of these four are male, the sexual distinctions being smaller (especially narrower) form, longer antennæ, the two basal joints of front tarsi evidently more transverse, and the hind tibiæ more densely clothed. The species is a close ally of *N. sercostatus*, Champ. (from North Australia), but having sent a specimen to Mr. Champion for comparison with his type, I am indebted to the courtesy of that eminent entomologist for the following note on *N. sercostatus* (as compared with the above species):—"The thorax is larger, less transverse, less tumid on disc, with anterior angles more extended forward and more acute, and hind angles extending further backward. The elytra are less rounded at the sides, more abruptly declivous behind, more strongly costate, the intermediate one shorter and not meeting either of the others behind; the puncturing of the under surface is more asperate, the prosternal process is broader, the mesosternal ditto, more tumid on each side anteriorly; the joints 9 and 10 of antennæ (which are wanting in your specimen) are strongly transverse." [*N. Harcastlei* joints 8-11 are all strongly transverse.—H.J.C.] The anterior situation of the sides of prothorax is an unusual character and is strongly marked in every specimen.

Types in the author's collection.

NYCTOZOILUS VERMICULATUS n sp.

Oblong-oval, dull brownish-black, convex, narrower than *N. Harcastlei*, glabrous, antennæ with two basal joints and apex (also tarsi) red. *Head* coarsely and closely punctate, labrum very prominent, epistoma truncate with rounded sides (in ♀ making distinct angle with the canthus, in ♂ collinear with it), separated from forehead by an impression on each side, without definite suture, forehead impressed at middle, canthus little raised; antennæ not extending to base of prothorax, joint 3 about twice as long as 4, very slightly enlarging from base to apex, joints 8-10 round, not

wider than 7, 11 one and a-half times as long as 10, oval. *Prothorax* 4×6 mm. (length measured in middle), greatest width at middle, base scarcely wider than apex, the latter arcuate-emarginate, front angles sub-rectangular, not prominent, sides moderately and evenly rounded, a little sinuate before the acute posterior angles, the latter produced and slightly overlapping elytra, extreme border nowhere clearly defined except on front angles; disc coarsely punctate, medial line clearly shown by small carina on basal and smooth impression on anterior half, a large foveate impression near centre, on each side of medial line. *Scutellum* very transverse and narrow. *Elytra* 9.5×8 (vix) mm.; regularly oval, convex, at extreme base narrower than prothorax, soon widening and moderately rounded at sides, apical declivity moderate, each elytron with three slightly raised, wide, and crenulate costæ, and a fourth less distinct lateral costa, the suture also raised and nodulose-costate throughout, bifurcating near scutellum; the first and fourth costæ meet in a wide curve near apex, the second and third indefinitely terminating within this curve, the first three costæ extending to the base, the fourth sub-obsolete on basal half, and less clearly defined than the others (but evident) posteriorly, intervals vermiculate-rugose, not reticulate, the ridges more obviously transverse towards the sides, in the centre entirely confused, the costæ and ridges coarsely punctate; beneath moderately nitid, black with reddish tinge, abdomen minutely shagreened, epipleuræ smooth, sternum very faintly rugose, prosternum compressed into a narrow ridge, its process produced and rounded at apex, with carinate edges, intercoxal process wide, margined and tumid at the sides; femora apparently smooth, hind and intermediate tibiæ of ♂ rather strongly tomentose on the inside, of ♀ much less so, submentum with wide bidentate lateral process projecting forward.

Dimensions: 14×8 (vix) mm.

Habitat: Augathella, South Queensland; sent by Mr. C. French, F.L.S.

Two specimens under examination, probably the two sexes. The female (?) has the front basal tarsi less enlarged, the abdomen more tumid, showing coriaceous margins, and less tomentose hind

tibiæ. The species differs from the two preceding in its evidently narrower elytra (compared with width of prothorax). From *N. Hardeastlei* it differs also in its much wider and less elevated costæ, the much coarser vermiculation of the intervals, and more coarsely punctured thorax; from *N. carbonarius* it further differs in its lighter colour, with its tendency to red, its complete absence of elytral reticulation, the evenly rounded sides of prothorax with very slight sinuation, &c. It is evidently much larger and with coarser sculpture than *N. Demeli*, Haag-Rut., a species identified by me in an insect from Rockhampton.

NYCTOZOILUS RUFICORNIS n. sp.

Oblong-ovate, convex, dull-brown above, reddish-brown beneath, glabrous, antennæ and tarsi chestnut-red. *Head*—Labrum emarginate and ciliate, epistoma truncate with rounded angles, its sides making an obtuse angle with the prominent and ear-like canthus, forehead tumid at base, depressed anteriorly with two transverse ridges, one nearly straight limiting the epistoma behind, the other crescent-shaped, extending between the eyes and defining the frontal impression, the whole irregularly and finely rugose, antennæ scarcely reaching base of prothorax, joint 3 about equal in length to 4 and 5 combined, 8-10 rounded, wider than 7, eleventh ovate-acuminate. *Prothorax* 4 × 6.5 mm. (length measured in middle), widest at middle, arcuate-emarginate at apex, subtruncate at base, anterior angles sub-acute (nearly rectangular), prominent and directed outwards and a little upwards, sides widely rounded, distinctly sinuate in front, only slightly so behind, posterior angles sub-rectangular, not produced or prominent, foliaceous margins wide, corrugated and slightly undulate (a little above the horizontal in front, below the horizontal behind the middle), the base, sides, and angular portion of apex having a thin, entire, nitid border. Disc coarsely and irregularly rugose, with ill-defined medial channel, with some close shallow punctures showing near the sides. *Scutellum* widely transverse, with triangular depression behind it. *Elytra* oval, wider than prothorax at base and about twice as long, shoulders obtusely rounded, showing narrow epipleural fold, sides a little widened to the middle, apical declivity moderate, each elytron separately rounded at apex,

margins obsolete; disc costate, each elytron with three slightly wavy round costæ, extending from base nearly to apex, the first two meeting near that region, the third continuous but sub-nodulose to apex, a fourth costa less defined (more broken on apical half and less raised throughout) near and parallel to extreme border, and a short scutellary costa, bifurcated behind the scutellum, joining the first costa at basal margin, the intervals coarsely vermiculately rugose, with no semblance of reticulation, a single line of coarse punctures at the sides, and some foveate punctures showing amongst the confused ridges of the intervals, these punctures most evident near the sides and suture, the last *not at all raised* except in the scutellary region. Abdomen finely and closely corrugated, the two apical segments closely punctate, prosternum and pleuræ nearly smooth, the prosternal process rounded at apex, sulcate at sides.

Dimensions: 14 × 7.5 mm.

Habitat: Camooweal, North Queensland.

A single specimen, probably ♀, kindly presented by Mr. C. French, is clearly distinguished from its allies. If classified by its elytral sculpture it is nearest *N. vermiculatus*, *supra* (which species is without the scutellary costa), but if by the sculpture of the pronotum it is nearest to *N. carbonarius*, from which it widely differs in size, colour, and shape (less prominent hind angles to prothorax, the margins thereof scarcely reflexed, the narrower and less widened elytra, *inter multa alia*).

AGLYPTA GEBIENI n. sp.

Elongate-ovate, black, moderately nitid, palpi, antennæ, and tarsi reddish. *Head* distinctly and closely punctate, punctures strongest on epistoma, labrum emarginate, epistoma truncate in front, flat above, forming with sides of canthus three lobes separately rounded; antennæ not quite reaching base of prothorax (longer and stouter than in *A. 8-costata*, Geb.), third joint as long as fourth and fifth combined, 4-7 slightly obconic, 8-10 oval, eleventh much longer than tenth, ovate. *Prothorax* widely arcuate-emarginate, 3 × 5.5 mm. (length measured in middle), wider at base than apex, widest near base, anterior angles scarcely produced, bluntly sub-acute (about 80 deg.), sides more roundly converging in

front than in *A. 8-costata*, slightly sinuate at base, posterior angles not produced, obtuse but distinct, margins strongly thickened and raised at sides and channelled within, very fine at base, obsolete at apex, base truncate, surface and margins under a lens perceptibly punctate, otherwise smooth. *Scutellum* transversely triangular. *Elytra* ovate, convex, wider than prothorax at base, a little longer than wide (8 × 7 mm.), shoulders round, sides slightly widening to beyond halfway, apical declivity very steep, very narrowly bordered (only evident from above at shoulders and apex). Each elytron with 4 costæ, the first sub-obsolete and smooth not extending to base, the second and third more strongly raised, the fourth near sides rather undefined and interrupted, only distinct on apical half, the suture smooth and costate towards apex. Intervals not at all rugose, irregularly but not closely covered with large deep punctures, with the usual lateral row of punctures. Underside nitid black, epipleuræ smooth, abdomen very closely and finely punctate, basal segments wrinkled, prosternum transversely rugose, its process finely margined, its apex produced into a fine tooth; underside of femora punctate, the posterior and intermediate tibiæ clothed on the inside with a thin line of red tomentum.

Dimensions: 13 × 7 mm.

Habitat: Kookynie, West Australia.

Two specimens sent by Mr. Duboulay present no sexual characters beyond the evident organ of the male, but are evidently closely allied to *A. 8-costata*, Gebien. Of the latter species I have specimens from Nungarra and Day Dawn (the latter being the author's locality), which are clearly identified. My species differs from that of Herr Gebien in its larger size, clearly punctate head, the much thicker border of pronotum, the different sculpture of the elytra (the costæ less raised, intervals not at all rugose, the punctures more distant and distinct, and its prosternal process, *inter alia*).

ONOTRICHUS n. gen.

Mentum transversely cordiform, submentum with a wide horizontal lateral lobe, mandibles simple; last joint of the maxillary palpi triangular; gula rugose; head large with elevated convex ridge between the eyes, allowing only a partial inclusion by the prothorax; eyes small, sub-vertical, widely separated; canthus

projecting in front of eyes and slightly overlapping them; antennæ stout, not extending to base of prothorax, third joint as long as 4 and 5 combined, 4-6 obconic, 7 very transverse and sub-triangular, 8-10 round and narrower than 7, eleventh oval and twice as long as 10. Prothorax very wide, widely channelled within the strongly thickened border, all angles sub-acute (rounded at extreme tips), apex arcuate-emarginate, base nearly straight with hind angles produced, sides and base of pronotum and the whole elytral surface moderately covered with long, fine, upright yellow hairs, abdomen and legs more sparsely clad with shorter hair of darker colour, body very convex and solid; scutellum very transverse, prosternum very slightly convex, its process flat with raised margins, rounded at apex and received into a widely rounded mesosternal cavity; intercoxal process very wide, rounded at apex, diverging behind; legs short; fore tibiæ with emarginate crenulate edge on outside, posterior surface coarsely punctate, tibiæ very shortly bispinose at apex, the spines almost concealed by tomentose cushion.

ONOTRICHUS LATERALIS n. sp.

Widely oval, black, moderately nitid above, very nitid beneath, apical joints of antennæ and tarsi red, tarsi and apex of tibiæ clothed with reddish tomentum, with a thin line of the same on the inside of posterior femora. *Head*—Labrum prominent, epistoma truncate in front, sides oblique and a little sinuate, very concave and depressed anteriorly, limited behind by bisinuate ridge, canthus parabolically raised and widened in front of eyes, front convex, the whole upper surface of head with large rather distant punctures. *Prothorax* 4 × 9 mm. (length measured in middle), greatest width behind middle, much wider at base than at apex (8 and 4.5 mm. respectively), emarginate at the produced bluntly acute anterior angles, sides very widely rounded with a small sinuation at each end, subdentate bluntly acute posterior angles deflexed; lateral border thick and rope-like, irregular in outline, and coarsely punctured and impressed, becoming more attenuate at the angles and much thinner at the apical margins of front angles (where it terminates); basal margin obsolete, lateral gutter of same width as border, strongly transversely rugose; disc moderately convex without any central line, and having a double

system of puncturation, the first consisting of large sparse punctures as on head, those towards the sides each bearing a long yellowish hair; the second consisting of minute and dense punctures. *Elytra* widely oval and convex, 10×9.5 mm., wider than prothorax at base, shoulders widely rounded and sub-obsolete, sides gradually expanding to beyond the middle, apex very blunt, its declivity steep; extreme border very narrow, not seen from above, without lateral gutter. Disc with four raised crenulate costæ on each elytron, not quite extending to base, terminated at different points on apical declivity, the three interior costæ prominent and nitid, their crenulation caused by rows of large punctures on each side, the fourth less evident and continuous, partly broken up into rows of tubercles; space between costæ slightly concave and rugose, irregularly covered with large punctures (larger than those on pronotum), each bearing a long hair; these hairs thin and scattered on centre, thicker on sides, base, and apex. Abdomen densely minutely punctate, three basal segments with large additional punctures, bearing short setæ, prosternum finely rugose-punctate, femora and tibiæ with double system of punctures noted on upper surface; posterior tarsi with basal joint as long as the rest combined.

Dimensions: 15×9.5 mm.

Habitat: Shark Bay, West Australia.

A single specimen, probably male, has been kindly presented me by Mr. C. French. I have been unwilling to dissect it for closer inspection of the mouth parts, but it can be readily differentiated from all described Nyctozoilides by the above diagnosis, and its longitudinally as well as transversely convex form.
